

Name: _____

Unit One Study Sheet

definition of algebra:

reunion of broken parts

relation:

Set of ordered pairs

function:

assigns one input for each output

function notation:

$f(x)$ - expresses a function as an equation

x	y $f(x)$
domain	range
independent	dependent
x-axis	y-axis

rate of change:

$$\frac{\text{dependent } \Delta}{\text{independent } \Delta}$$

slope formula:

$$\frac{y_2 - y_1}{x_2 - x_1}$$

slope of vertical lines: und

slope of horizontal lines: 0

parent linear function: $y = x$

slope-intercept form: $y = mx + b$

To Graph Equations in Slope-Intercept Form (steps):

- ① plot a point at the y-int
- ② use the slope (rise over run) to find the second point
- ③ name and extend your line

To Write Equations of Lines in Slope-Intercept Form Given 2 Points (steps):

- ① Find the slope of the line using the slope formula
- ② pick one of the given points, substitute m, x, y and solve for b .
- ③ write the equation (keep x & y variables)

standard form of a linear equation: $Ax + By = C$

To Graph Equations of Lines in Standard Form (steps):

- ① set x to \emptyset and solve for y . Plot on y -axis
- ② set y to \emptyset and solve for x . Plot on x -axis
- ③ extend and name your lines

slope of a line in standard form: $-A/B$ y-int C/B

Equation of a vertical line: $x =$	Equation of a horizontal line: $y =$
slope of a vertical line: und	slope of a horizontal line: 0

To Write Equations of Parallel Lines (steps):

- ① take slope of given line
if in sf. $m = -A/B$
- ② Substitute m, x, y and solve for b
 $\text{---} = \text{---} + b$
- ③ write the equation (x & y are variables)

To Write Equations of Perpendicular Lines (steps):

- ① Take the neg rec of given slope
- ② Follow steps 2 & 3 for parallel lines

Determining if Lines are Parallel, Perpendicular, or Neither (steps):

- ① Identify slope and y-int of each
 $y = \underline{m}x + \underline{b}$ $Ax + By = C$
 $m = -\frac{A}{B}$ $b = \frac{C}{B}$
- ② Make a decision
 same slope & y-int \rightarrow neither - same line
 unrelated \rightarrow neither
 same slope, dif y-int \rightarrow parallel
 neg rec slope \rightarrow perpendicular

THE END OF THE UNIT!!